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ABSTRACT

With the advent of helical scan videotape technology, we have now arrived at a time in electro-communications when the technological capability to publish has moved into the hands of the consumer. As a result of this, schools embracing electro-communications capabilities centering on the use of videotape recorded materials should be studied, a greater quantity and diversity of prerecorded materials should be created, and, on a regional basis, joint and cooperative supplier and user agencies should be established to serve the growing needs of education for impartial and systematic information about electro-communications systems. (SP)

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The Adoption and Distribution of Videotape Materials for Educational Use

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OFFICE OF EDUCATION

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Introduction

The present commitment of American Education to the use of instructional materials of a motion visual-aural nature is undeniable. Dollar expenditures by public, private, and parochial elementary and secondary schools plus public and private institutions of higher learning as well as business and trade schools for the use of 8 mm and 16 mm film materials involving production, purchase, and distribution of such materials amounted to $ 94.6 million in calendar 1967 (1).

Before 1956: Period Prior To Development of Videotape Technology

In contrast to the history of film techniques for education, the development of television techniques for education has been relatively short in years but rapid in technological progress. The adoption by education of television communication techniques took hold by the middle 1950's in an operating context which was "live" and which lacked at the outset a satisfactory storage and retrieval capability. The only means available for recording was that of kinescoping, ie. the recording on motion picture film the television image from the face of a television picture display tube - technically known as a kinescope.

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Early investigations and uses made of television by education involved facilities ranging from single building and campus-wide closed-circuit wire distributions systems to city and state-wide broadcast transmissions. Of the most notable among the very many demonstrations were those at Hagerstown, Maryland (commencing Fall, 1956) for the public school level and at Pennsylvania State University (commencing Spring, 1955) for the college level. Apart from a relatively few exceptions, all these demonstrations used live television camera presentations simultaneously distributed by wire means to closed-circuit viewers or by wireless means to broadcast transmission viewers. During these very extensive and pioneering efforts almost every conceivable aspect of the use of television by education was investigated (2). Conclusions were drawn about costs, educational effectiveness, and curricular design at a time when the condition of the technology of television communication was - in retrospect - relatively quite primitive.

In many of the early investigations and uses of television by education where the objective was to reach viewers over a large geographic area extending anywhere from a city to the entire nation in size, commercial television time was purchased or public service time was used. The first purely educational television station (KUHT-ETV8) was jointly licensed to the

University of Houston and the Houston Board of Education and placed into regular operation on May 12, 1953. The Fund For Adult Education of the Ford Foundation through matching grants was instrumental in establishing many of the first ETV stations (2).

1956-1961: Period of Broadcast Standard Videotape Development

It was not until 1956 - after experience had been accumulated by education with a large variety of live closed-circuit and broadcast transmission uses - that videotape recording and playback capability was first introduced and demonstrated at a meeting of the National Association of Radio and Television Broadcasters in the form of a commercially available and satisfactory means for television electronic storage and retrieval (3). The videotape technique was developed for the entertainment broadcasting industry initially as a delay device. The first videotape machines gobbled up by the commercial television broadcasters were - from the point of view of educational agencies per se - expensive to acquire and complicated to operate. As first a short term time delay device and then a long term storage/retrieval delay device, the videotape machine became the unchallenged essential tool for the television broadcaster. In the late 1950's the Ford Foundation provided a grant through the National Educational Television and Radio Center to provide one broadcast standard videotape machine to all NETRC affiliated

ETV stations. Accordingly, in the late 1950's where an educational agency either operated an ETV broadcast station or used the broadcast time provided by an ETV broadcast station for transmission of instructional course material ... the relative sudden availability of widespread videotape record/playback capability made an initial and significant impression on the production, transmission, and utilization by educational agencies of television course materials.

During this period in response to the Meierhenry-McBride survey conducted in 59/60 and published in 1961 the then 53 operating ETV stations throughout the country reported that a total of 199 elementary (K-6) courses were recorded; 103 secondary (7-12) courses were recorded; and 135 college level courses were recorded. Only 88 of the known 222 closed-circuit activities replied to the survey. Of these 88 reporting closed-circuit installations, there were only reported 83 recorded programs (4). The study does not indicate whether these recordings were made on videotape or film. The study reports that of the 53 replying stations, 35 reported having kinescope recording facilities and that 50 reported having videotape record/playback capability. It is the experience of the author that the ETV stations turned en mass to the use of videotape. The only limiting factor in committing instructional courses and programs to videotape was

the availability of enough videotape and situations where a recorded presentation was to be subsequently used at a time or place where a videotape machine was not available for playback. Clearly both the focus and initiative for the recording for education of instructional courses and programs at this time lay in the hands of the ETV broadcast station. Videotape technology was not yet feasible to the point of being generally available as an "in-house" device for education.

1961-And On: Period of Helical Standard Videotape Development

In March, 1961 a major manufacturer of broadcast standard videotape equipment demonstrated in the form of a commercially available device a heretofore new and different videotape record and playback process exhibiting a helical scan characteristic which was by neither design or intent to be compatible with the by then well established broadcast quadruplex standard. The helical scan videotape machine was announced as specifically designed for the closed-circuit education and training community. This event showed the way to many other manufacturers (3). The result today is a large array of low cost, physically compact, highly portable, and easy to operate helical scan videotape machines in model types for almost every conceivable non-broadcast closed-circuit educational application (6,7). Each manufacturer has developed his own unique helical videotape

record/playback standard ... in some cases two or more different standards ... with the result that videotapes recorded on one helical machine standard are not directly retrievable on another helical machine standard of the same or another manufacturer. There is a regular cry for a universal helical videotape machine standardization agreement among manufacturers. The major argument is to provide for complete mechanical interchange of recorded videotape materials among all helical machines irrespective of manufacturer's make and model. The major counter argument is that to fix a universal helical recording standard - if such could in fact be done - would stop competition and thereby freeze technological developments, cost reduction programs, etc. Any individual or agency contemplating the acquisition of a videotape machine for educational applications must undertake his own investigations in a methodical, objective, and dispassionate manner (8). In point of fact all established distributors of pre-recorded instructional videotape materials make their materials available for use on one or more helical standard machines. Major distributors (see below) make their materials available for several different helical standard machines.

The Adoption of Videotape Technology By Education

In the years since 1961 the appreciation and utilization of the helical scan videotape machine has continued to mature as a

result of continued technological development by many manufacturers [7] plus the growing number of uses to which the helical scan machine has been put by education. The purchase by education of television videotape and associated origination and display equipment increased 13% in 1967 over 1966 while in the same period the purchase of film projection and associated equipment decreased [1]. At the November 1968 technical meeting of the Society of Motion Picture and Television Engineers, Washington DC, Dr. Sam M. Lambert, Executive Secretary, NEA, reported that the number of television receivers in the nation's schools has exceeded for the first time the number of film projectors. It is estimated that by 1970 every school in the United States will have at least one television receiver [9].

An important reason for the capture by videotape and related equipment of an increasingly larger share of educational media equipment expenditures is the multi-application potential of helical videotape equipment systems as compared to the single "retrieval" ability of the film projector.

A review of the experience of education has shown that the helical scan videotape machine and associated television camera, microphone, and monitor/receiver equipment is devoted by educational users to three general categories of applications

singularly or (most often) in combination[7]. In recording applications the helical machine is used to store visual/aural presentations: 1) created locally with recording input obtained by the machine from a television camera and microphone; 2) created remotely and received locally as a recording input obtained by the machine from a closed-circuit, telephone company, or CATV wire source; or 3) created remotely and received locally as a recording input obtained by the machine from a VHF/UHF broadcast; point-to-point microwave; multiple address ITFS: or (future) satellite-to-ground wireless source. In interactive feedback applications the helical machine with associated equipment is used as an instant record/replay means in almost every conceivable situation involving self-development of cognitive and mechanical skills by students, teachers, and administrators. In distribution applications the helical machine is used to retrieve previously recorded visual/aural presentations: 1) created locally with available resources of technical facilities, trained and knowledgeable personnel, and budgetary support; and 2) acquired outside as a pre-recorded videotape course-series, lesson-title, or subject module.

The commitment of education to the use of videotape - communication techniques is firm. The initiative being taken throughout the country at the various levels of education is typified by

a distributed mimeograph publication of the Los Angeles City Schools which states that, "The uses of the Video Tape Recorder are applicable to every area of (instruction) education. It can be used as a motivational tool to create enthusiasm and greater understanding of instructional material." The publication goes on to identify and recommend to school personnel 13 combinations of videotape recording and playback activities under the heading of "evaluation", 15 combinations under the heading of "presentations", and 7 combinations under the heading of "skill development" (10).

The Forms, Uses, and Needs For Pre-Recorded Instructional Materials By Education

Recorded materials - whether on film or videotape - can take the form of a complete course-series, individual lesson - titles, or specific subject oriented materials ranging in programatic form from being self-sufficient and independent in their ability to stand alone in an instructional context to materials of a highly dependent, impersonalized, and subject-oriented nature in segment or module form requiring extensive teacher and/or cross media support. The uses to which these various types of materials have been put by education have been categorized (4,11) as being: 1) total teaching or major resource in which all major content and basic concepts are presented; 2) supplementary in which the recorded material does not present major

content but rather correlates with the locally conducted course of study and provides unusual resource treatments of course content not ordinarily possible; 3) enrichment in which the recorded material is not related to the principle course of study but rather to other subject areas deemed desirable; and 4) remedial in which the recorded material provides for make-up or concentrated attention in narrow subject areas.

From the statistical sample of the school population constructed for the 1961 Meierhenry-McBride study, 49% of the schools reported the use of pre-recorded instructional television materials. Of these reporting schools: 57% identified their use as supplementary; 38% identified their use as enrichment; 5% identified their use as remedial; and none identified their use as total (4). Subsequent studies of the National Instructional Television Center (previously the National Center For School and College Television) verify the continued majority of uses as being supplemental (11). Additional information gained by the 1961 study indicates that the reasons stated by the schools for using televised instruction were: to improve instruction - 54%; to extend curriculum - 30%; for increased enrollment - 6%; alleviate teacher shortage - 6%; and for cost reduction - 4% (4).

The summary conclusion is that the use of television in courses of instruction - first as a live presentation and then with the advent of videotape as a recorded presentation -

has typically taken the programatic form of complete course-series used as a supplement to school-room conducted courses for the declared purpose of improving instruction. There are inferences contained in this summary conclusion which are both intriguing and speculative. For one it is to be noted that investigations of education vis-a-vis the use of television techniques and the great body of related research were completed by 1961. It is also to be noted that the result of technological development of television videotape recording had progressed no further by 1961 than to equip agencies essentially external to schools ie. ETV stations, with videotape machine capability. The salient point to be identified for the purposes of this paper is that for whatever reason, the vast majority of video-tape pre-recorded materials offered for inter-institutional use by either the ETV stations or the developing ITV Libraries (see below) were then and are now of the course-series form (see Appendix). A critical question is whether this present preponderance of materials in the television course-series form of the past and present times has been a positive or reluctant choice on the part of the school. The implications are important to the future viability of the course-series form ... its continued use by the schools ... and its continued provision by inter-institutional sources of pre-recorded materials.

The increasing use by education of on-site media production equipment in which the videotape machine is taking a center

role has in part maneuvered the concerns of many school media administrators from piecemeal equipment questions to questions overall application strategy (12). This manifestation centers in electronic random access retrieval systems (often termed "dial") which are being constructed in a great variety of forms at all levels of education about the country to support small group (about 25 maximum - the number generally regarded as a desirable optimum for viewing a single 21 - 23 inch television screen) and individual student self-paced access to visual/aural programatic materials which are modularized and segmented in conformance to highly specific and localized curriculum design. Systems illustrating the great variety in design and application are to be found at Oklahoma Christian College, Beverly Hills (Calif) Unified School District, Orange Coast College (Costa Mesa, California), University of California at Berkeley, Evanston High School (Illinois), New York State University at Brockport, and West Hartford Public Schools (Conn). The simple programatic objectives in this trend are to employ the very latest in sophisticated electro-communications technology to provide to individual students at any time or locale individually designed media experiences in modular and segment form (13).

The question of the form and structure of pre-recorded aural/visual motion materials - whether on videotape or film - is critical for this random access trend. The pre-recorded

materials made available by recognized distributors fall in the course-series or lesson-title programatic form (see appendix). Rather than for, "Regular ETV or ITV programs in consecutive order ...," the need is for, "... materials (on videotape) which are meaningful, direct, concise, and simple. This may sound like a big order, but what we are looking for is something between the 8 mm single concept loop and the conventional 16 mm classroom film."(14) "Programming for dial access is in its infancy. Software producers are still cranking out lengthy, comprehensive films and TV programs. The supply of short-burst video (tape) treatments of skills, concepts, and ideas is meagre."(15)

Although the above suggests a perspective gap in the form and structure of existing pre-recorded videotape instructional materials in the eyes of a number of forward moving media developments about the country, it is interesting insofar as pre-recorded film materials are concerned to note that the number of short films (defined as having no maximum length but containing a specific communication objective, ie. as in the "single-concept" film and "film loop")(1) released in 1967 was double the number turned out in 1966 and the sales of 8 mm silent short film prints jumped 77% in 1967, going from $1.8 million to $3.1 million in 1967(1). The traditional tendency

for the production by the film industry of individual titles as distinguished by the developed conventions to apply television production efforts toward complete series would seem at the moment to direct the attention of newer media activities toward film materials rather than videotape materials. But the widespread misunderstanding and fear of the film distributors to inquiries for the use of their film format materials in electronic distribution systems for the moment nullifies this potential advantage of film over videotape materials (16).

NDEA Study of In-School Use and Exchange of Television Materials - 1961

Title VII of the National Defense Education Act of 1958 focused on improving instruction through the uses of educational media such as motion pictures, programmed instruction and television. Under Title VII research projects and dissemination activities were devised. The question of how effective television materials could be made readily available to schools was identified and divided itself into three parts: 1) how to locate and gather useful ITV materials; 2) how to ensure continuing availability and production of quality materials; and 3) how to devise a system for the nationwide interchange of selected materials (17).

In response to these and similar questions a study contract between the US Office of Education and the University of Nebraska

was developed for which Meierhenry and McBride were the principle investigators. The scope of the study was outlined in part by the proposal which observed that there had been to date a large development of television programs for direct and/or supplementary instruction at all school levels; activities throughout the country were unrelated; there was a minimum of information exchanged; there was practically no exchange of actual programs; and there was prospect for an increasing number and variety of program subjects to be covered by the use of television. It was further stated that in order to conserve time, energy, and money it was urgent to study the present status of the field; determine likely future developments; and recommend a distribution plan (4). The work of Meierhenry and McBride conducted prior to and released in 1961 amassed a large amount of evidence relating to the development and use of the materials for televised instruction; how television was used in school curricula; the amount and availability of recorded television materials; the reasons for and against the availability of already recorded materials; dispositional factors regarding the use of television for instructional purposes; and factors pertaining to the feasibility and organization for inter-institutional exchange and distribution of recorded instructional television materials.

Although approximately ten years old and conducted at a time prior to the availability directly to the schools of present day video-

tape technology and techniques, this study nevertheless established a bench mark in the crystalization of the concept of the inter-institutional exchange of materials directly pertinent to courses of instruction. One recommendation of the study was to establish a nonprofit national center for recorded televised instruction to: 1) encourage studies to determine curriculum objectives best served at a national level by recorded televised instruction; 2) encourage production of needed high quality recorded television programs and related materials; 3) support experimentation with the utilization of recorded televised instruction; 4) serve as a cataloguer, disseminator, and distributor of recorded televised instructional programs and supplementary materials; and 5) facilitate selection and training of personnel needed for all types of instruction by television. A second recommendation was to establish nonprofit regional production and distribution centers for recorded televised instruction to serve the same purposes as those recommended above but keyed to the region.

The study suggested problems needing further study: 1) legal problems - most notably residual fees for teachers participating in the recording of materials and the use of commercially prepared materials; 2) State and local laws affecting the use and distribution of recorded materials; 3) cost factors bearing on decision between live and/or recorded televised instruction; and

4) effect of new industrial developments bearing on such factors as cost, scheduling flexibility, and the ease of undertaking the recording of instruction. If anything, the problems suggested for further study by Meierhenry-McBride are more pertinent today than they were ten years ago. The factor pointed to of new industrial developments is perhaps the most sensitive of them all. The opinion of the writer is that lack of proper attention here has in certain important cases found developing educational media programs left waiting at the wrong gate.

NDEA/National Library Project First Demonstration Period - 1962 - 65 (11,17).

Acting on the recommendations of the Meierhenry-McBride study to establish a non-profit national center for recorded televised instruction the US Office of Education under provision of NDEA Title VII in January 1962 funded a three year demonstration project to examine the status and needs of instructional television programming in the United States. The contract was made with the National Educational Television and Radio Center to establish the National Instructional Television Library in New York City. Two regional libraries were established at the same time - one at the University of Nebraska called the Great Plains Regional Instructional Television Library and the other in Cambridge, Massachusetts at the headquarters of the Eastern

Educational Television Network and called the Northeastern Regional Instructional Television Library. The purpose of this demonstration project was to study the educational desirability and economic feasibility of exchanging recorded instructional materials through the mechanisms of a national library system.

Under its mandate for the three year demonstration project (62-65) the National Instructional Television Library (NITL) set about to: 1) appraise the exchange potential of existing instructional television programming; 2) develop and demonstrate policies and procedures regarding the evaluation, acquisition, and exchange of recorded programming; 3) make available selected series for widespread use; 4) study economic feasibility for exchange; 5) research the character and needs of instructional television; and 6) identify and assess factors regarding a permanent national instructional television system. By late 1963 NITL researchers had surveyed the kind of instructional fare offered on educational television stations. They concluded that relatively few of the courses examined were suitable for nationwide distribution. The survey also showed that existing sources of programs, ie. ITV production centers could not supply quality ITV materials in the amount required. In September, 1963 at regional meetings called by NITL with authorization of the Educational Media Branch of the USOE there

was complete agreement that the areas of greatest concern were: 1) the urgent need for high quality television materials; and 2) the need to supplement local resources with the most useful materials available from other sources. It was further urged that consideration be given to an enlarged and permanent national and regional instructional television library service of the highest quality.

It was found that the NITL demonstration project could not be completed in the three year (62-65) period. More time was needed to: 1) identify and assess the considerable accumulation of recorded instructional course material; 2) intensively involve numerous educational leaders; 3) acquire courses for pilot distribution through actual negotiation; 4) repeatedly disseminate information to potential users; 5) await the decision of local preview commitees; 6) provide broadcast materials consistant with school schedules; 7) gauge the acceptance of course materials through analysis of user reactions and patterns of subsequent use; and 8) judge the operational and economic practicability of a national system by studying cost and income over a meaningful number of years.

Toward the end of the initial demonstration period the NITL Advisory Board and Staff plus carefully solicited opinion from instructional television leaders throughout the country concluded

that: 1) high quality recorded materials were essential to effective use and future development of instructional television; 2) the necessary high quality can only be obtained at the local level only if limited local resources are supplemented by readily available television materials produced in other places; 3) sole reliance on existing sources of recorded instructional programming will not assure the availability of the necessary high quality materials; 4) installation of new facilities (closed-circuit) is increasing and will continue to do so; 5) significant effort will be required to assure the satisfactory growth of instructional television; 6) improvement is needed in wise classroom utilization of television; and 7) the demonstration project had a beneficial impact upon the development and projected character of instructional television. Because of the identified need for more time and the findings of the reporting and reviewing authorities, it was recommended that the demonstration be continued beyond the scheduled termination in 1965.

Matters were somewhat complicated by the fact that as the end of the 62-65 demonstration was approached the National Educational Television and Radio Center was obliged to request release from its contractual obligation because it was under direction to give up its activities in instructional television as well as in several other areas. The USOE consented. In formulating the

proposal for both continuing and relocating the demonstration project it was agreed that both the objectives and findings of the first demonstration period must continue to be observed. Added to the second demonstration phase was the plan to take more specific initiative in the matter of the acquisition and distribution of recorded course materials on videotape plus extensive information services to users in particular and to education in general. Accordingly it was recommended that the demonstration would have the best prospects if it were relocated for the following major reasons to an established educational agency: 1) experienced in the production and national distribution of quality instructional materials for all educational levels; 2) possessing a national reputation for leadership in the educational media field; 3) whose administration expressed a genuine and long term interest in the concept of an instructional television library; and 4) centrally located with respect to transportation. The requested extension period was to be two years. There was deep concern that the agency accepting the NITL project could and would in some way work to continue the activity of the NITL in whatever way might prove necessary beyond the second two year demonstration period until such time that the project might become self-sustaining. Indiana University became the site of the relocated NITL project for a second two-year period (actually 28 months) beginning May 1,

1965 and the contracting agent with USOE became the Indiana University Foundation. The NITL was renamed the National Center For School and College Television.

NDEA/National Library Project Second Demonstration Period - 1965 - 67 (11,17)

The demonstration project was in good company. The Indiana University Foundation also contributed to the establishment of the Educational Television Stations Program Service of the National Association of Educational Broadcasters which also was organized in 1965. A third program service has also been made available for national distribution through the Indiana University Audio-Visual Department. The NET-Film Service transfer to 16 mm film selected NET programs which are made available to schools, civic, and private organizations. Recent conversations between this writer and the administration of both the NET-Film service as well as the general motion picture film distribution activities at Indiana University indicate that there has been long consideration about the release by the University of many of its produced and distributed film titles in the form of one or more helical videotape standards. Reasons cited were the growing needs of schools for such materials in various of the videotape formats.

The relationship between the National Center For School and College Television (NCSCT) continued with regional libraries

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through a newly established reciprocal representation agreement which included financial support from the USOE via the NCSCT with the Great Plains Instructional Television Library, the Northeastern Regional Instructional Television Library, and the Western Radio and Television Association. At the conclusion of the first demonstration period the Great Plains Library had moved into activities heavily leaning toward actual exchange of recorded videotape course materials. Using the facilities and logistic support of the University of Nebraska and its Radio-Television activities which included ETV station KUON, the Great Plains Library had aggressively pursued the avenue of finding potentially good materials used in one section of the country and making them available on a cost plus overhead basis to other sections of the country. At the conclusion of the second demonstration period, Great Plains continued as an independent and self supporting library (see below).

The Northeastern Library during the first demonstration period had grown as a corporate extension of the various services of the Eastern Educational Network (EEN). An extremely strong inter-station curriculum development and assessment activity evolved. The Northeastern Library during this period served as an ITV program management link among the EEN stations, regional ITV authorities, and regional, state, school, and educational agencies. Many of the courses first distributed by the NCSCT came from ETV station constituents of the Northeastern Library.

At the end of the second demonstration period and upon the conclusion of the representational agreement with NCSCT and its modest financial support, the Northeastern Library cut back severely its strong central initiative and reverted to an inter-station ITV Association of the member stations of the EEN. Newly designated as the third regional representative in the second demonstration period was the Western Radio and Television Association (WRTA) which used the contributed financial support to establish an office in San Francisco to carry out its representational responsibilities for the NCSCT. Without prior activities of any sort to build upon, the WRTA embarked upon activites which were mainly information oriented about the specific recorded instructional television programs and related services of the NCSCT as well as general information felt to be of value to the instructional television community. Aside from travel correspondence, and direct support of NCSCT needs, the WRTA Office distributed a wide range of information in the form of a newsletter, equipment specification guidelines, a collated listing by subject and grade level of all available recorded instructional materials cleared for television usage, a summary report covering an NEA sponsored ITFS assessment conference, and a handbook guide of information for educational agencies interested in the ITFS service. At the conclusion of the second USOE demonstration period and the funds provided through the NCSCT, the Office maintained by the WRTA in support of the

NCSCT ceased to operate in early 1967.

In the second demonstration period the NCSCT developed an image of its own and moved actively into the phase of service and operations with the aims of: 1) acquiring existing courses completing successive and stringent evaluations by MCSCT staff, instructional television specialists, and subject matter authorities; 2) improving where determined feasible to do so those aspects of existing courses evaluated as "near misses" for national distribution; 3) developing new courses and materials in curriculum areas where through the conduct of assessment conferences it was determined that either nothing existed for which there was a clear need or what did exist was not satisfactory for either acquisition or improvement; and 4) serving as a central information agency for the field of ITV. NCSCT evaluated the submission of existing materials by owner-producers for purposes of potential NCSCT acquisition and national distribution at mainly the elementary level. From 1962 through 1967 (through both NDEA demonstration periods) of one hundred seventy two elementary courses in the subject areas of music, art, health and physical education, foreign languages, mathematics, science, and social studies 14 (8.1%) were considered directly suitable; 39 (22.7%) were considered near misses but tentatively suitable; and 119 (69.2%) were considered un-suitable for national distribution. Because of the large need

indicated for what were considered by the NCSCT to be suitable materials, during the second demonstration period (65-67) NCSCT was able to additionally augment and enhance seven of the initially judged tentatively suitable courses through reorganization of lesson material, improved production and technical recording, improved presentations, and acquisition of clearances for nation-wide use of music and other copyrighted materials. Agreements for the remodelling of an additional five courses were entered into. During the 62-67 period evaluative judgements of actual or tentative unsuitability for national distribution obtained from NCSCT staff, instructional television authorities, and subject matter authorities were based on: 1) technical quality; 2) restricted investments in research, planning, and consultation because of the pre-production assumption of only local use; and 3) tendency of teacher communication to be more concerned with the material presented rather than effect upon learners. Suitability criteria identified as required of courses for national distribution consisted of: 1) course subjects of a content and a manner as commonly taught in most places; 2) ability to impress educators responsible for determining what is to be offered in their locales; 3) required high technical quality because of the necessity for duplication for distribution; 4) necessity of exceptional teaching and production quality to meet the human double standard which

exaggerates local confidence and diminishes outside achievement.

In order to determine the needs for new courses and materials NCSCT held an extensive series of assessment conferences widely involving ITV and content authorities and covering basically same subject categories (with some additions) as above. From 1965 through 1967 a total of 441 already recorded elementary courses produced and in use by schools were submitted to the National Center Assessment Conferences: Music - 98; Art - 82; Foreign Language - 73; Science - 66; Social Studies - 55; Mathematics - 34; and Physical Education - 33. Similarly, a total of 93 secondary courses were submitted: Social Studies - 41; Foreign Language - 13; Science - 13; Mathematics - 11; Physical Education - 7; Art - 6; and Music - 2. Of the courses submitted for assessment: 80% of the elementary grade lessons were 15 or 20 minutes in length; course-series ranged in number from 2 to 120 lessons; and more than 60% of the time the courses were transmitted at the rate of one new lesson every week for a full academic year.

NCSCT reported that the number of hours devoted to instruction each week by ETV broadcast stations increased from 754 in 1961 to more than 2500 in 1967; the average hours each week per station increased from 14 in 1961 to more than 22 in 1967; the

use of local production to create in-school programming decreased from 82% in 1962 to 40% in 1967; and of the 134 operating ETV stations in 1967, 115 offered instructional television lessons for elementary and secondary grades. The above figures as well as others pertaining to students using television were reported by the NCSCT through its research and dissemination functions and participation with other educational agencies in a variety of studies (18).

During the second demonstration period extensive field services were undertaken to establish and strengthen liason with teachers, administrators, and instructional television personnel throughout the country. Centered at Bloomington Indiana, the field services were undertaken in conjunction with the representational arrangements with the three regional organizations described above. Direct mail campaigns, personal visits, regional workshops, and previewing of specially constructed course kits containing three representative lessons plus a sample teachers guide were carried out as a part of the field service activity.

National Library - 1967 and on

The USOE contract with the Indiana University Foundation For Support of the National Center concluded in May 1967. Until self support is attained, receipts from NCSCT course users and the

Indiana University foundation will support the NCSCT. The NCSCT currently projects that it will become self-supporting by the year 1973. NCSCT materials have grown in distribution to a point where they are now used by almost every educational television station serving schools in the country and by a growing number of closed circuit installations and instructional television fixed service systems. NCSCT predicts a continually expanding use of materials related directly to the growth in techanical facilities. Seen as most important is the re-use pattern that has emerged after the second demonstration period. Re-use patterns for several elementary courses for 1967 show that in 70% of the cases in which Center course material is used, it is being reused in a successive academic period.

In July 1967 three regional centers directly under National Center supervision and operation were established in San Francisco, Milwaukee and Boston. A National Center representative will visit periodically every major instructional television installation in the United States. The Center will continue and expand close contact with sources of programming and information. Center regional representatives will gather data concerning each installations physical plant, production capacities, personnel, review and selection practices, existing program schedules, materials available for acquisition. The field services activity is additionally concerned with course promotion techniques,

proper use of Center materials, and the development of efficient techniques of duplication and distribution of materials. By September 1, 1967 the Center was providing programming in Music, Art, the Humanities, Health, Language Arts, Mathematics, Science and the Social Sciences. In 1968 NCSCT placed the Harvard produced college series in circulation (see Appendix.) For each of its television offerings the Center provided related materials for classroom teachers. When required, materials are offered for the use of students. In late 1968 the NCSCT was renamed the National Instructional Television (NIT). The overall conclusions contained in the March 1968 evaluative report of activity find that much of existing instructional television material continues to be of modest quality. Reported opinions solicited by NIT from panels of disinterested educators widely concur in the judgement that much of existing television courses produced and used locally have only limited instructional effectiveness.

National Instructional Television - Currently Announced Distribution Practices

Courses are available on broadcast quadruplex and several helical videotape standards for rental only as a part of the regular instructional television activities of schools and colleges. The rental fee applies to all forms of electronic transmission including open-circuit (broadcast by ETV or commercial VHF or

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UHF television station), closed-circuit, and 2500 Mhz/ITFS facilities. Fees are based upon the total student enrollment of all schools participating in the general school television service of the contracting agency. The fee provides for unlimited use of each course-lesson during one calendar week. In and outgoing transportation is extra with a standard out charge of 50 cents per lesson. Teacher's manuals and student exercise books are available for a large majority of the course offerings at extra charge. Preview materials for each course consisting of representative lessons (on 16 mm film or videotape) plus a copy of teacher's manual and student exercise book as appropriate are available upon request without fee to qualified contracting agencies. Requirements other than above and agreements for acquisition covering conditions for specific use are individually negotiated. For a list of availabilities see the appendix.

For the currently available series, Patterns In Arithmetic the per lesson unit rental cost at the maximum rate (for a participating school population of 800,000 and more) ranges from approximately $62 to $68. The per lesson unit rental cost at the minimum rate (for a participating school population of 50,000 and less) ranges from approximately $26 to $29.

NDEA/Regional Library Demonstration Project - 1962-65 (19,20)

The Meierhenry-McBride study (4) called for the establishment of one or more pilot regional production and distribution centers at the same time a national center was established. In January 1962 coincidental to the establishment of the National Instructional Television Library pilot Demonstration Project, the U S Office of Education contracted with the University of Nebraska to establish and operate as a pilot demonstration project the Great Plains Regional Instructional Television Library to serve the twelve-state midwestern region. At the same time the Northeastern Regional Instructional Television Library was established at the headquarters of the Eastern Educational Television Network to serve the Northeastern region (see above). The Meierhenry-McBride study recommended the same set of objectives for the regional demonstration libraries as were recommended for the national demonstration library. It is therefore not surprising that there is great similarity between the initially declared aims and objectives of the national and regional demonstration library projects. By the end of the first three-year demonstration period (62-65) each library project had developed its own characteristics. The description that follows of the Great Plains Regional Instructional Television Library (GPRITL) will build on the initially declared aims and objectives already discussed in detail above under the national library project and additionally highlight certain distinguishing characteristics.

At the outset it should be noted that the principle investigators of the basic Meierhenry-McBride study were from the University of Nebraska. Dr. Meierhenry at the time of the study was Associate Dean of the University Teachers College and Mr. McBride was Director of Broadcasting at the University of Nebraska with major administrative responsibilities for the closed-circuit use of television at the University as well as the developing role of the University in the state-wide ETV broadcasting and closed-circuit television network. While neither undertook or exercised operational authority in the organization and conduct of the affairs of GPRITL, each served on the Policy Board and each (particularly McBride) was regularly available for advice and consultation. In retrospect this has proven an invaluable link between the very extensive Meierhenry-McBride study and its translation into a viable library demonstration project.

The general findings of the Meierhenry-McBride study acted as points of departure for the design, establishment, and practical operation of GPRITL. In brief the findings were that 1) many schools by 1962 had produced viable television courses for their own use through the means of television broadcast transmission (and were thereby accustomed to the use of television techniques for course instruction); 2) a good number of courses were being "saved" by means of recording on videotape at the broadcast

standard; and 3) many of these videotape recorded courses featured teachers of excellence who used highly effective methods for the television medium. One of the implicit findings of the Meierhenry-McBride study was the relatively widespread willingness at the public school levels of education to make locally recorded material available for outside use where appropriate clearances could be obtained and provided logistics, promotion, and similar details did not fall upon the producing school agency (21). The prospect that the producing school agency might obtain some modest return as an unplanned windfall to its production budget from rental fees obtained through the efforts of an intermediate distribution agency further encouraged the availability of recorded course materials. The development during the first demonstration period (62-65) of GPRITL flowed from this premise, ie. the prior existence of viable educational materials for exchange. On the other hand during this same first demonstration period the National Instructional Television Library (NITL) almost immediately came to the conclusion that relatively little of the existing materials in use by the schools was suitable for distribution as is (11,17) (see above.) Consequently it appears that the attention of the NITL during the first demonstration period was directed to appraisal of materials and needs and establishing lines of communication with the administrative and curriculum elements of the educational community. The GPRITL immediately moved into an operating phase involving actual exchange of recorded materials.

It is to be noted that NITL and GPRITL were physically situated in different types of operating contexts which undoubtedly conditioned their growth and activities. NITL during the first demonstration phase was headquartered at the National Educational Television and Radio Center in New York City. This was the administrative location of the central agency for the evening programming concerns of ETV broadcasting stations. The elaborate videotape duplicating and support facilities servicing the nationwide group of ETV stations were located at Ann Arbor, Michigan. GPRITL on the other hand was located in an actual operating context which: 1) was not overshadowed by a larger entity engaged in a somewhat different endeavor; 2) which had a more easily definable and cohesive regional geographic area to serve; and 3) had relatively easy physical access to modest but effective videotape duplication and distribution facilities. That this conclusion is justified is seen in the requisites developed for the relocation and extension of the NITL at the time when the National Educational Television and Radio Center requested release from its contractual obligation to the USOE for the NITL demonstration project and the declaration by the Staff, Board, and consultants of the NITL that more time was needed to effect the demonstration (see above Page 21). The choice of the Indiana University location for the second demonstration period gave to NITL the resources obtained by

GPRITL during the first period and has overall proved most judicious. (It would be most productive to further compare the location situation of the Northeastern Instructional Television Library in the context of an active regional ETV station network but in the interests of brevity this is omitted.)

During the first library demonstration period the GPRITL demonstrated the actual feasibility, need, and practicality of sharing quality instructional television recordings on a multi-state and regional basis by successfully developing a working structure for duplication, storage, distribution, promotion, utilization, and costs. GPRITL was advised by an eighteen man policy board comprised of school superintendents, college presidents, state department of education representatives, and educational media specialists from the region. An Operations Committee composed of the small GPRITL staff, field agents, and experienced ITV administrators formed a GPRITL Operations Committee. During the first demonstration period GPRITL obtained endorsement from the North Central Association of Colleges and Secondary Schools, the largest regional educational accrediting association in the United States.

At the time an extension was requested by the NITL for an additional time period to conduct the demonstration project, a representational agreement was negotiated to provide for continued support of the GPRITL beyond the first demonstration period. The

support for the NITL was extended for a second twenty-eight month demonstration period beginning May, 1965. The second period of support for the GPRITL began this time as well as did similar periods of support for the Northeastern Regional Instructional Television Library and the newly involved Western Radio and Television Association. The GPRITL discontinued its fiscal relationship with the USOE on November 1, 1966 thus becoming the first self-supporting activity of this nature in the United States. At about this same time, the GPRITL began to change both its name and avowed scope of activities.

The Library dropped the term "regional" and then adopted the term "national" and is now known as the Great Plains National Instructional Television Library (GPNITL). Additional field representatives have been added to its staff. A recent report (20) indicates there are course users in 40 of the states including Alaska and Hawaii plus Canada. The school agency and system users of GPNITL materials are reported to number considerably in excess of 400. More than 38,000 recorded lesson units have been distributed since the start of the Library in 1962. Course re-use rate continues at about 95% over the years. A large offering covering all grade levels and a wide selection of subject matter is available (see appendix). As at the NITL, the staff of the GPNITL predict continued growth in course use

as more educational CCTV facilities are installed yearly. New material is being added in the form of course sequences.

The GPNITL makes a special effort to assemble and distribute materials for teacher training, ITV utilization, and archival purposes. GPNITL produces teacher guides for many of its courses. An annual catalogue containing complete outlines of all of its available library materials is published. A Newsletter offered free upon request continuously updates the annual catalogue as to new acquisitions and availabilities and offers noteworthy information, advice, and guidance for the use of television techniques in education.

The University of Nebraska continues to provide facility support. A large videotape duplication and distribution facility is maintained. Upon reaching an agreement for distribution by the GPNITL, broadcast standard videotape masters are received and held at the headquarters Lincoln, Nebraska and are used to issue individual and fresh recordings for each user in whatever broadcast or helical scan videotape standard is required. The Library encourages the user to provide his own videotape. However, the Library will under certain conditions lease the videotape as well as the use of the course. The user fee is designed to cover the overhead costs of the Library, the costs of duplication and distribution, and a fee to the producing agency for the right to use the series.

Great Plains National Television Library - Currently Announced Distribution Practices (22)

Courses are available on the broadcast quadruplex and a large variety of helical videotape standards for rental by qualifying educational agencies and activities. The rental fee applies to all forms of initial and subsequent electronic transmission in any combination of VHF and UHF broadcast, 2500 Mhz, inter- or intra-building closed-circuit, and CATV system. The fee provides for unlimited use of each course-lesson during one 7 day period. Fees are based upon the actual cost of producing the recording plus additional variables covering: 1) the number and length of lessons; 2) the number of transmission points from which a lesson is telecast; 3) the total span of time during which all telecasts of a single lesson occur; and 4) whether the user or the Library supplies the physical videotape used to contain the recorded material. Where appropriate, return shipping charges are extra. Teacher's manuals and student workbooks are available for a large majority of the course offerings at extra charge. Preview materials consisting of a representative lesson (on 16 mm film or videotape) for each course (excepting utilization and in-service materials) plus copies of teacher's manual and student workbook as appropriate are available upon request without fee to interested educational institutions. Requirements other than above and agreements for acquisition covering specific

conditions of use are individually negotiated. For a current list of availabilities see the appendix.

Where the user supplies the videotape the per lesson unit rental cost for initial use of a 15-minute lesson is $45.00. If the user has retained the recordings on his own videotape the per lesson unit rental cost for use in a subsequent semester or year is $32.50. Where the user does not supply his own videotape and the Library is required to supply the videotape, the per lesson unit rental cost for use of a 15-minute lesson is $50.00.

(9,23)

The Midwest Program On Airborne Television Instruction

Parallel and seemingly independent of the Meierhenry-McBride study and the two demonstrations of national/regional instructional television libraries was the organization and growth of the Midwest Program On Airborne Television Instruction (MPATI). MPATI was centered in the Midwest and directly served schools in parts of six states (Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin - plus a small portion of Canada) by means of two-channel broadcast transmissions on UHF frequencies 72 and 76 operated from an airplane and essentially completely independent of the ground based ETV broadcast stations in the six-state area.

Instead of a library, MPATI (until 1968) could best be characterized as a regional programming cooperative operated by an

inter-locking organization controlled by the school agencies which it serviced through the means of a non-profit corporate entity. From its inception in 1959 MPATI was conceived as a centrally operated agency for the design, production, transmission, and evaluation of recorded instructional television programs. Participating school and educational entities which formed MPATI produced anew their own series of instructional courses to meet the subject and grade level needs of the six-state region. The result was then and still is today the best example of an agreed upon body of inter-institutional curriculum materials for use at the public school level. The hypothesis of MPATI from the very beginning has been that a single transmission channel such as offered by an ETV broadcast station for the distribution of instructional programs to schools is not enough. Looking ahead in technological developments, should the prospect of direct-to-the-school satellite transmissions become possible over a national or regional area, the MPATI experience could be considered a very apt demonstration.

MPATI : 1959 - May 1962

This period covers the organization and operation of MPATI as a demonstration. MPATI was first announced as a service for transmission direct to the television sets in the classrooms of participating schools throughout the region. Enunciated purposes were to: 1) broaden the range of educational offerings heretofore

available; 2) increase the quality of offerings were existing resources unavilable or inadequate; 3) undertake the above at a cost less than that for a comparable improvement of quality by any other means; and 4) conduct the demonstration program in a manner to assist the development of a permanent facility for the long range management and financing of an airborne instructional program by local and state educational agencies. The essence of the MPATI plan was the need for a multi-channel transmission facility. The MPATI rational described a typical twelve grade school system as offering anywhere from 100 to 175 separate courses, some divided into differentiated sections of student ability. A single broadcast television channel can provide only 12 half-hour units of instruction on the 6 hour school day, enough for only one-half hour per day for each grade level. The disparity between broadcasting potential and the size of curriculum is even greater at the college level. MPATI transmitted on two UHF channels during the demonstration year. The fully operating MPATI program called for transmission on six channels from a single orbiting airplane. The region to be served in the six-state area consisted of more than 127,000 square miles and contained (at the time) 17,000 schools and colleges enrolling about 7,000,000 students. It was expected that by the end of the first year of demonstration (1962) that as many as 2,000,000 of these students would have received some part of their education from the MPATI program.

An MPATI Curriculum Policy and Planning Commission served to recommend new courses and to update recorded courses as needed. For purposes of two-way communication and coordination the total region was divided into twenty resource areas administered respectively by area committees and staff coordinators. Wide consultation was encouraged at every step of the design, production, transmission, and evaluation process. An intensive teacher talent search was conducted throughout the United States in order to select those teachers who would prepare and record the needed course materials. Kinescoped auditions of about 300 candidates were received. A two-step selection process chose the eleven actual teachers who began by attending workshops at Purdue University in the summer of 1960 to prepare the actual courses for production starting in late 1960 at nine different ETV Station and Closed-Circuit production centers in the Midwest and East. The teachers spent an average of 20 hours preparing and recording each lesson. Once the production schedule started, two and three lessons a week were completed at each of the production centers. Every MPATI course is accompanied by a teacher's guide providing a daily outline, suggested pre- and post-program activities, helpful aids, and collateral activities to reinforce the learning process. Guides were made easily available to participating classrooms. Sample lesson telecasts from the orbiting airplane (see below) were first offered in May, 1961. In June and July 1961 special telecasts were broadcast to 6,000

teachers and administrators attending professional assistance workshops in 43 locations in the six state area. A series of broadcasts were made to pre-school opening conferences in July and August. The first full academic year of demonstration transmissions in which MPATI materials were to be used as a regular part of the school curriculum began on September 11, 1961. Sixteen courses were scheduled in the first semester and twenty-one courses were scheduled in the second semester. Transmissions were on two channels for six hours a day - four days a week. Courses varied from 15-20 minutes for elementary and secondary to 30 minutes for college level.

A videotape processing and duplicating center consisting of five broadcast standard machines was established at Purdue University to handle the materials. Based upon the successful stratovision experiment by Westinghouse Corporation in 1948, one DC6 AB aircraft - with a second identically equipped plane as a standby - based at the Purdue University Airport orbited in a 10 mile radius circle at 23,000 feet over Montpelier in North Central Indiana. The plane was equipped with two broadcast standard videotape machines and a 50 kilowatt transmitter for each of the two UHF channels for which the original construction permits were granted in December, 1959. The broadcasts covered a radius of approximately 200 miles reaching students in over 13,000 separate building locations. About one-third of these were estimated to be in school systems of less than 2,000

pupils. The UHF transmissions from the airplane were designed for direct reception by properly equipped television receivers in school rooms. Additionally, local ETV stations in major cities of the area were encouraged to receive the MPATI broadcasts for simultaneous or videotape delay re-transmission to solve fringe reception or time delay schedule problems.

The total project cost through the end of the first demonstration transmission school year (May, 1962) of $8,500,000 was largely met by the Ford Foundation ($7,200,000), with the balance coming from other foundations and private industry. Approximately half of these monies went for acquisition and operation of technical facilities (excepting that the two aircraft at $900,000 each were deferred for financial support after conclusion of the demonstration period by the ensuing organization). During this experimental period the schools paid only for location receiving equipment and for classroom lesson guides at $2.00 each. It was estimated that starting June, 1962 that MPATI could be operated on an annual budget of approximately $3,750,000 or at about $1.00 per student if the estimated potential users of between 3,500,000 and 4,000,000 students would participate. The initial proposals in 1959 called for a self-sustained financial activity to take over after June, 1962.

MPATI: June 1962 - May 1968

In 1962 the participating schools joined to form a non-profit

making organization to permanently continue the MPATI program as already described. Participating schools paid an annual per pupil charge of approximately $1.00. Additional funds were received from the Ford Foundation for a period of time. Activities in the main continued as in the first demonstration year. A significantly new activity was the encouragement in a purposeful way of the use of the recorded MPATI courses by schools outside of the six-state region. In the 61/62 school year seven stations are reported to have scheduled the equivalent of 15 courses for an annual rental income of $21,000. By 1967/68 this had grown to 70 stations scheduling the equivalent of 172 courses. Orders were reported on hand for 1968/69 from 83 users in 31 states.

In July 1965 the Federal Communications Commission ruled that MPATI could not continue to use the UHF band for airborne transmissions beyond the conclusion of the 1969/70 school year citing the need for ground based use of these frequencies in the six state area. MPATI had been preparing to move from two UHF channel to the planned for six UHF channel operation. The steady growth in numbers of schools participating in MPATI of about 35% per year stopped. As an alternate means of wireless transmission for the orbiting airplane, six 2,500 Mhz/ITFS channels were applied for and received. ITFS transmission of a nature to serve the already established coverage area of MPATI services was untried. MPATI felt strongly that an extensive

propagation study for the proposed ITFS was needed. An adequate amount of money for this was not forthcoming. Even if ITFS transmissions of satisfactory strength and coverage area could be obtained, the considerable added expense of reception facilities for the ITFS band which would have to be borne by each individual school was disheartening. Accordingly, the Corporation membership voted in December, 1967 to conclude the MPATI service as an airborne transmission activity in May, 1968 upon the conclusion of the 1967/68 school year. It was further voted to attempt to reorganize the Corporation as a producer/distributor of pre-recorded instructional materials.

MPATI: June 1968 And On

This period represents a transition from a broadcast transmission agency to that of a corporately organized production and distribution organization designed to serve the needs of its members. A successor corporate organization has been formed which now sees the entire United States as its market. In general the plan is to enter into a series of agreements with states and or schools systems which would 1) give the participating entity complete access to the entire MPATI library of pre-recorded materials for a per pupil annual cost ranging from $0.03 and up plus cost of duplication, and which would 2) commit the participating states (school systems are exempt in lieu of a higher cost-per-student rate) to additional financial support for at least one new series per participating state per year.

A rational for the need for a central programming organization to create new materials which would not otherwise probably be produced has been developed by MPATI and is quite similar to the underlying rationales stated and pursued by the National and Regional Instructional Television Libraries already discussed. But rather than operating apart from the "customer" as a take-it-or-leave-it exchange in the fashion of NIT and GPNITL, MPATI is clearly pursuing the avenue of participating cooperative State and large school system membership with centralized corporate control. MPATI will continue to make available its library of materials to individual users such as ITV Authorities using ETV station channels or school agencies using their own ITFS and CCTV distribution systems. But the structure of the rather ingenious MPATI plan is to encourage amalgamation either before dealing with MPATI or as a result of dealing with MPATI.

MPATI is distinguished from the NIT and the GPNITL by what seems to be an emphasized concern for the availability of its materials for use in the school room. This is not to say that NIT and GPNITL are not so concerned. Perhaps this is a result of the background of MPATI because of its operation of its own distribution facility (the transmitting airplane) plus the fact that all of MPATI materials are produced and owned outright by MPATI. The latter is not the case with NIT and GPNITL. Another

reason may be that MPATI does not have technical commitment to anyone particular means of course distribution, as does NIT and GPNITL to basic physical distribution in the broadcast videotape format. Any means of distribution which will not serve to defeat the prior commitments or continued economic viability of MPATI has been termed appropriate for consideration. Recognizing the developing need for the extended availability to locally maintained helical scan videotape libraries, MPATI and a manufacturer of one of the helical videotape machine standards are now exploring a procedure wherein an individual school might annually subscribe to a specified list of individual subject titles by: 1) purchasing outright the videotape; 2) paying a very modest fee for duplication of the requested title onto the purchased videotape; and 3) paying to MPATI an annual use license fee of a dollar a minute. Such fee would continue to apply until revoked in writing by the subscribing school by means of returning to MPATI a notarized certificate of erasure of the specific subject title. The subscribing school is then free to re-use the reel of videotape for any other application.

As of the 1968/69 year two states - Illinois and Ohio - have joined MPATI as participating States obtaining complete access to the entire MPATI library for all boni fide school agencies within the State. Having obtained access to the MPATI collection, on the state level each State has developed a wide variety of distribution means for participating schools for these materials

using in part ETV broadcast stations, ITFS systems, CATV systems, CCTV systems, and actual physical distribution throughout the state of pre-recorded MPATI videotapes. Schools within such states have been encouraged to obtain the materials and participate by whatever means most suits their classroom needs. Course usage by individual users in states not covered by agreements continues to grow (see above). A new 32 lesson course in basic economics for junior high is in final stages of preparation. Three existing elementary level sciences courses and one elementary level language arts course are under revision. The newly developed state participation plan (discussed above) assures a continued supply of newly recorded instructional course materials.

MPATI - Currently Announced Distribution Practices

In geographic areas and situations not covered by a specially designed state plan, courses are available on broadcast quadruplex and several helical videotape standards for rental by qualifying educational agencies and activities. The rental fee applies to all forms of electronic distribution and relay except commercial television stations. The fees apply to one time use - repeat charges quoted on request. Fees are based upon the number of educational institutions served by the coverage area of the primary and secondary transmitters. CCTV, ITFS, and similar means of transmission fall within the minimum schedule for institutional coverage. A videotape usage charge

is waived if the customer provides his own videotape stock. Return shipping charges are extra. Teacher's manuals and student materials are available where appropriate for an extra charge. Preview lessons on quadruplex videotape or 16 mm kinescope plus sample teacher's guide are available to qualifying educational agencies for no charge except the cost of shipping. Requirements other than above and agreements for acquisition covering specific conditions of use are individually negotiated. For a current list of availabilities see the appendix.

For a currently available series, Space Age Science, containing 32, 20 minute lessons where the user supplies the videotape, the per lesson unit rental cost at the maximum rate (for 2001 educational institutions and more) is $57.50. The per lesson unit rental cost at the minimum rate (for 300 educational institutions and less) is $30.00.

Western Video Industries

Organized in 1967 as a commercial venture of the Hollywood Video Center of Los Angeles, Western Video Industries is indicative of the movement of private enterprise into the field of providing pre-recorded courses and materials on videotape for instructional and training uses.

Western Video employs experienced and competent teachers to plan course sequences, write teacher guides and student workbook

materials, and appear before the camera in the process of recording the course presentations. Consultants are engaged. The recordings are made initially on broadcast standard videotape in color using first-rate technical and production support facilities and staff. No other producer and distributor of contemporary videotape instructional materials has recourse to such technical and production resources.

Courses are available on broadcast quadruplex color and black and white quadruplex standard as well as on most helical standards for rental only. The rental fee applies to broadcast, closed-circuit, and 2,500 Mhz/ITFS transmission. Fees are based upon the total school population from grades 1 through 12 in the district or districts viewing the provided materials. The fee applies to a three day use period. Teacher's manuals are available at extra cost. Preview lessons are available on videotape. Requirements other than above and agreements for acquisition covering conditions for specific use are individually negotiated. For list of availabilities see the appendix.

For the currently available series, Exploring the World of Science containing 85 fifteen-minute lessons, the per lesson unit rental cost at the maximum rate (for a school population of 100,000 or more) is $80.00 for black and white and $100.00 for color. The per lesson unit rental cost at the minimum rate

(for a school population of 50,000 and less) is $35.00 for black and white and $50.00 for color.

Telstar Productions, Inc.

Organized in 1968 as a non-profit venture by persons experienced in educational and instructional television broadcast matters in the the Minneapolis and Minnesota area of the country, Telstar Productions has begun its activities with a pre-existing series of recorded materials initially designed for ETV station transmission. Their existing materials lie in two essentially different areas, ie. personal skill development and nursing education.

Courses are available on broadcast color and black and white quadruplex standard as well as on several helical standards for rental only. Fee information is obtained by specific inquiry. Period length of use is determined by specific inquiry. Student materials consisting variously of textbook, study guides, etc. are available as appropriate at a specified unit cost. A preview lesson on videotape is available upon request. Requirements other than above and agreements for acquisition covering conditions for specific use are individually negotiated. For a list of availabilities see the appendix.

For the currently available series, Success Through Effective Writing containing ten thirty-minute lessons the per lesson unit rental for any ETV station is $7.50 for black and white and $15.00 for color.

Network For Continuing Medical Education

The Network For Continuing Medical Education (NCME) is a free educational service in the form of an inter-institutional exchange of produced videotape materials under NCME direction linking medical schools and hospitals for the post-graduate medical education and instruction of doctors, nurses, technicians, and paramedical personnel. The Network is headquartered in New York City and services locations throughout the United States and Canada. The Network has been in operation for several years and is entirely supported by the Roche Laboratories. Proprietary messages regarding pharmaceutical product development and research which are unrelated to the program content of the reel and clearly distinguishable are included at several positions in each distributed reel of videotape material. Each participating institution receives a one-hour videotape reel containing an average of three separate presentations which are predominantly clinical but include research, paramedical subjects, and recent news of medical developments. A monthly reel exclusively for nursing and paramedical subjects is additionally distributed. NCME provides a great variety of assistance of a

utilization nature for participating institutions: 1) TV Guides distributed in advance of each bi-weekly and monthly videotape;2) poster and display materials; 3) visiting representatives who provide advice regarding maximum use of the television and related display facilities and greater viewer participation; 4) technical advice regarding installation and use of videotape and related equipment; 5) utilization clinics at locations throughout the country to help actual and potential participants learn about the NCME services; and 6) a periodic newsletter reporting latest developments of interest to participating members. Where proper procedures are followed course credit can be obtained from the American Academy of General Practice by viewing the videotapes. After the videotape materials have circulated, many are placed into a library method of circulation wherein each presentation is on a separate reel and is available for rental to qualifying agencies.

Pre-recorded videotape materials are available on broadcast quadruplex as well as on many helical standards variously in color and in black and white. Current videotapes are distributed without charge to participating institutions. Library videotapes (those which have previously circulated) are available for rental. Current and library videotapes may be used over the television distribution facilities normally available to and used by the participating institution at scheduled times convenient for

viewing by staff, attending physicians, nurses, and paramedical personnel. Both current and library videotapes are not meant for public viewing. The fee for library videotapes provides for a use period of two weeks. Return postage and requested insurance is extra. Utilization and information materials for each current and library videotape are provided as needed without charge. Requirements other than above and agreements for acquisition covering conditions for specific use are individually negotiated. For a list of availabilities see the appendix.

Currently distributed videotape reels containing up to three dinstinct presentations plus several institutional messages are available without charge to participating institutions. Library presentations each on an individual reel are available to qualifying institutions of $12.00 for each title received in available helical scan formats. Quadruplex scan formats are higher.

Medical Television Network

The Medical Television Network(MTN) of Southern California began in 1964 when a microwave broadcast from the University of California at Los Angeles to the San Bernardino County Hospital was successfully accomplished. In April and March, 1965, an experimental encoded program consisting of ten two-hour sessions was broadcast over KCET-ETV28, Los Angeles, to 425 doctors in

fifteen selected hospitals. The encoded broadcast of medical programs continues on a weekly basis. From September 1968 through June 1969 an estimated 120 participating hospitals throughout California will receive the now twice weekly broadcasts which have been expanded to include nursing.

Videotapes are being physically distributed to participating institutions in 16 states throughout the country. In late 1968, 8,000 hospitals in the United States were contacted for purposes of expanding the program of the physical distribution of pre-recorded videotapes. An annual package of thirty-six thirty-minute pre-recorded videotapes is offered - twenty-seven for the physicians and nine for the nurses. They are on current subjects and provide information for use in daily practice. Physician oriented programs are planned in consultation with the American Academy of General Practice and are approved for credit provided proper procedures are followed. After the current videotape materials are circulated they are placed in a library method of circulation.

Pre-recorded current videotape materials are available on several helical standard in black and white for rental by hospitals. The library videotapes are available on quadruplex and helical quadruplex variously as color and black and white. The rental fee for current videotapes applies to any mode of distribution

excepting VHF and UHF broadcast which is normally available and used by the hospital. Library videotapes are available for rental. The videotapes are not meant for public viewing. Each received videotape is retained for a one-week period for viewing convenience. A twelve program description schedule is distributed shortly before each cycle with enough time allowed for intramural program promotion. Requirements other than above and agreements for acquisition covering conditions for specific use are individually negotiated. For a list of availabilities see the Appendix.

Currently distributed videotape materials are available through an annual agreement for receipt of the total series of thirty-six programs at a per unit program cost of $20.83. Library videotapes are available upon inquiry.

Video Nursing

Video Nursing began distribution in 1968 several course series produced on videotape at WTTW ETV11, Chicago and intended for nursing students and graduate nurses in continuing education and refresher programs. The course series plus supplementary materials was supported by a grant for the Improvement In Nurse Training, from the Division of Nursing, USPHS, Department of Health, Education, and Welfare.

Only certain of a larger number of course series being distributed on 16 mm film are simultaneously being distributed on two helical scan videotape standards in black and white. The videotapes are available for rental only. The rental fee applies to all forms of electronic distribution excepting VHF and UHF broadcasting and 2500 Mhz/ITFS which are normally available and used by the subscriber. The fee provides for a single class viewing covering one day's use. Return postage plus requested insurance is extra. Student syllabus, instructor guides, and audiotapes of videotape presentations are available at extra charge. There is no provision for preview of either videotape or supplementary materials. Requirements other than above and agreements for acquisition covering conditions for specific use are individually negotiated. For a list of availabilities see the appendix.

For the currently available series, Nursing In Psychiatry containing twenty-four forty-four minute lessons, the per lesson unit rental cost is $15.00.

ANA-NLN Center For Videotape

The American Nursing Association and the National League for Nursing have for some time operated a film distribution service. In 1968 a program for the distribution of materials in the form of pre-recorded videotape materials was initiated. Initial

arrangements are now underway to distribute a television refresher course for registered professional nurses. This series was first produced for the State University of New York by the Russel Sage College Department of Nursing and ETV station WMHT of Schenectady, New York.

Information regarding distribution practices is not available.

Advanced Management Research

In early 1968 the Advanced Management Research Corporation announced an executive series of pre-recorded videotape courses for business and industry encompassing a full range of subject areas. This activity is an outgrowth of the work of AMR in seminars and group educational meetings.

Courses are available on a color and black and white helical videotape standard for rental or purchase. The fee applies to electronic closed-circuit distribution only which is normally available and used by the subscriber or purchaser. Fees are set for rental or purchase for each particular course-series. Requirements other than above and agreements for acquisition covering conditions for specific use are individually negotiated. For a list of availabilities see the appendix.

For the currently available series, Marketing and the Computer containing eight lessons ranging in time-length from twenty-five to forty-five minutes the per lesson unit cost for purchase

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of the complete series is $346.88 in black and white and $396.88 in color. For the same series the per lesson unit cost for rental of the complete series $106.25 in black and white and $106.25 in color.

Office of Public Affairs and Education, Republic Steel Corporation

In 1968 the Republic Steel Corporation through an educational subsidiary arranged to make available on videotape certain of its course-series previously available for management training in business and industry on 16 mm film. This program is still under development.

Distributed courses are available on broadcast quadruplex and several helical scan videotape standards for sale and rental. The fee applies to various types of electronic transmission as a result of specific negotiation. Fees are based upon either a set cost per course-series or alternately the number of individual users as a result of specific negotiation. Conference leader/ teacher guides, textbooks, audits, and related materials are available for each course-series. Requirements other than above and agreements for acquisition covering conditions for specific use are individually negotiated. For a list of availabilities see the appendix.

For the currently available series, Exploring Basic Economics containing ten thirty-minute lessons, the approximate per

lesson unit cost for purchase of the complete series is reported as $120.00.

Educational Systems & Designs, Inc.

In 1968 Educational Systems and Designs began to make available on videotape certain of its course-series previously available for management training in business and industry on 16 mm film.

Courses are available on various videotape playback standards for long term lease covering a minimum three year period at a price which varies according to the particular type of videotape desired and a per capita charge based upon the number of student guides in each order. The fee applies to various types of electronic transmission as a result of specific negotiation. Shipping charges are extra. Conference leader guides are available.

For a minimum three year lease period of the currently available series, Management By Objectives containing six thirty-minute lessons, the per lesson unit cost of $200.00 plus a per capita charge based upon the number of guides (workbooks) in each order ranging from a per unit guide cost maximum (for twenty-four and fewer guides) of $30.00 each to a minimum (for 500 and more guides) of $16.00 each.

Professional Development Corporation

The Professional Development Corporation was organized in late 1968 to develop by means of videotape production and provide course-series of a professional and continuing education nature to engineering and scientific management. Higher level mathematics and computer technology are subject areas of first attention. Lecturers are experienced teachers. A bound set of detailed lecture notes for each participant is to be made available. Consulting services by the Professional Development Corporation will be provided to organizations interested in establishing their own continuing education programs. Each course-series is described as being a self-contained educational package structured to appeal to the heterogeneous nature of the industrial community and allowing for differences in backgrounds, experience, academic training, capabilities, and specialities.

Courses are available on various standards of helical scan videotape as well as 16 mm film for rental. The rental fee applies to all forms of electronic distribution excepting VHF and UHF broadcasting which are normally available and used by the subscriber. Fees are set at a flat per lecture hour rate. The fee provides for unlimited use of each course-lecture by a subscriber for a two-week period. Twenty sets of bound notes covering the lecture material are supplied free with each lecture. Additional sets are supplied for a fee. Preview lectures from currently available courses are available by arrangement. Requirements other than above and agreements for acquisition

covering conditions for specific use are individually negotiated. For a list of availabilities see the appendix.

For the currently available series, Basic Unified Calculus containing twenty-four sixty minute lectures, the per lecture unit rental cost is $300.00.

Modern Videotape Library

Long a source of free loan 16 mm film titles sponsored by business and industry for use by educational organizations and others, The Modern Talking Picture Service has specifically organized a free loan videotape library which began operation in late 1968. A number of business documentary and public relations presentations heretofor available on 16 mm film are now being distributed on several helical scan videotape standards. The individual titles listed as being available are identical to the 16 mm versions which continue to be distributed. All presentations carry some sort of institutional message provided by the sponsor. Thirty-four titles are available. They range widely in subject matter and interest level. These materials are available as unrelated subject titles - not in course sequence form. A brochure describing the service is readily available from Modern.

Individual subject titles are available in the form of prerecorded videotape variously in color and black and white in

in several helical scan standards without charge for use excepting return postage. The videotapes are provided for use on closed-circuit electronic transmission systems only. The videotapes are to be returned promptly after use. The number of viewers using the videotapes is to be reported. Requests well in advance are encouraged. Alternate use dates are encouraged. Time lengths individually range from thirteen to thirty minutes.

Ampex Tape Exchange

As a major manufacturer of helical scan videotape equipment, the Industrial and Educational Products Division of the Ampex Corporation has organized a program exchange service in response to the requests of educational, instructional, and training agencies. The purpose of the Ampex Tape Exchange is to: 1) assist producers and distributors of materials who are contemplating the distribution of series or program titles on the one-inch Ampex helical scan videotape standard; 2) collect and distribute information to present and future users of the Ampex one-inch helical scan equipment about sources of pre-recorded videotape materials available for use on their equipment; and 3) undertake the distribution of pre-recorded videotape materials in the Ampex one-inch helical scan format. A Videotape Duplicating Facility specializing in the duplication of black and white and color videotape and film materials into the Ampex one-inch helical scan standard compliments the efforts of the Ampex Videotape Exchange.

Pre-recorded Ampex one-inch helical standard videotapes in a variety of course and individual titles sequences are available variously in color and black and white for rental and sale. The fee applies to specifically indicated forms of electronic transmission set for each series or title. In and outgoing transportation and insurance is extra. Requirements other than above and agreements for acquisition covering conditions for specific use are individually negotiated. For a list of availabilities see the appendix.

For the currently available series, AACTE Workshop In Teacher Education consisting of four lecture-demonstrations ranging in length from forty-five to sixty minutes, the per reel unit sale cost is $60.00 plus shipping.

Summary Statement and Proposals

There can be little doubt of the rapid adoption by education of the use of television communication techniques in teaching and learning activities. Education has accepted the premises leading to the use of television techniques; dollar expenditures by education for television equipment capability are significant and rising; and equipment capability for the storage and retreival of instructional materials which is in a manner peculiar to and most favored by education's use of the television medium and which is relatively inexpensive to acquire and use, portable in transport and application, and simple to operate and maintain has been developed and is being widely adopted. The growth of collections of pre-recorded instructional materials in the medium peculiar to television - videotape - has been steady and in recent years has accelerated. The cause for the inter-institutional development, exchange, and distribution of pre-recorded videotape materials first investigated and demonstrated by a series of government supported pilot projects has in substance proved viable and has been joined by a growing list of private entrepenures. There is every prospect for the continued and rapid growth in education of the use of television techniques incident to the teaching learning process and the adoption of the videotape machine and accompanying techniques of application as the prime mode of intra- and inter-system communication.

From the point of education's need - growth has not been fast enough. But judged from the increasingly fragmented experiences

of education with developing electro-communications capabilities - growth has been too rapid. Techniques of application have over-run understandings. The capabilities of technology have overrun techniques.

It is the thesis of this paper that with the advent of helical scan videotape technology in the early '60s we have now clearly arrived at a time in electro-communications when the technological capability to "publish" has moved full swing out of exclusive domaine of the producer or creator of materials into the hands of the consumer or user of materials. (Zerox and Polaroid similarly mark an almost identical advent for print and photography.) What is proposed below is not new in the context of thought ... but it is new in the matter of the adoption of electro-communication concepts and the context of the technological times in which we live.

Proposal Number 1: Study Disposition Toward, Adoption By, Means Employed, and Results Obtained by Schools Embracing Electro-Communications Capabilities Centering on the Use of Videotape Recorded Materials.

A notable contribution was made by the Meierhenry-McBride study in the technological context of its time. A contemporary study along the subject lines suggested and organized and conducted in the fashion of the Meierhenry/ McBride study is urged. Particular attention should be given to new educational philosophies, new technological capabilities, and new needs for programatic forms of recorded materials.

Proposal Number 2: Stimulate the Creation of a greater quantity of pre-recorded videotape materials which are more widely diverse in form, content, and structure.

The day of the "best" telecourse for national use at a particular subject and grade level is gone - if in fact it was ever here. It is urged that a matching fund support scheme be developed for the acquisition and use by school systems of pre-recorded videotape materials widely diverse in form, content, and structure. The operation of the Farr-Quimby Act in California which provides 50% of the cost of program materials used by schools in ITV programs provides an excellent guide. The program has placed fund support at the decision point ie. the classroom, of need in terms of the form, content, and structure of the needed materials; has made possible the upgrading of resident school instructional programs; and has stimulated a greater number of competitive sources of more diverse types of pre-recorded instructional television materials.

Proposal Number 3: Establish on a regional basis joint and cooperative supplier/user agencies to serve the growing needs of education for impartial and systematic information for the design, establishment, operation, and assessment of electro-communications systems.

Properly conducted dialogue between suppliers of goods and services and the educational users of these goods and services is sadly lacking. There have been some attempts in the USOE (Equipment Development Branch) and through the

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efforts of non-profit and private enterprise. These have failed because either one side from the beginning had the better of the other or the undertaking was not adequately organized and funded. A properly established organization is urged with distinct regional lines of organization and opportunities of broad participation by users and suppliers. This should be basically an educational and communications effort. Activities could develop to cover such diverse activities as jointly agreed upon supplier/user standards; a centralized information activity pertaining to technological developments as well as user applications of the technology; a rights clearance bank for print, film and electronic materials subject to actual and potential use by education in electro-communication systems - particularly in the matter of local videotape recording and reproduction; operation of media transfer facilities, ie. among the mediums of print, film, and tape servicing all the different standards; and a clearing house for the organization and dissemination of research pertaining to the electro-communications facilities, media, and - methods.

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APPENDIX

Videotape Materials In Distribution By The Great Plains National Instructional Television Library, University of Nebraska, Lincoln, Nebraska 68508

RECOMMENDED STARTING LEVEL: Primary (K-3)

	Series Name / Program Title	Number In Series	Time Length
1.	Time For Music	30	15:00
2.	Language Corner	30	15:00
3.	Sounds Like Magic	30	15:00
4.	Mathematics - 1	35	15-20:00
5.	Just Wondering	31	15:00
6.	Sounds To Say	25	15:00
7.	Around The Corner	35	15:00
8.	The Magic of Words	25	15:00
9.	Children's Literature	30	15:00
10.	Art About Us	30	20:00
11.	Word Magic	16	15:00
12.	Mathematics - 2	35	20:00
13.	Neighborhood Explorers	15	15:00
14.	Just Curious	30	15:00
15.	Language Lane	31	20:00
16.	Mathematics - 3	34	20:00
17.	Land and Sea	15	15:00
18.	Our Changing Community	28	15:00

RECOMMENDED STARTING LEVEL: Intermediate (Grades 4-6)

	Series Name / Program Title	Number In Series	Time Length
1.	Time For Art	30	20:00
2.	Geography - 4	34	20:00
3.	Mathematics - 4	31	20:00
4.	Search For Science	32	15:00
5.	Americans All	31	20:00
6.	Rails West	5	30:00
7.	Quest For The Best	32	20:00
8.	Bill Martin	15	15:00
9.	Let's Explore Science	15	15:00
10.	Hablo Espanol	100	15:00
11.	Mathematics - 5	31	20:00
12.	Adventures In Science	52	30:00
13.	Geography For The Gifted	12	30:00
14.	Places In The News	weekly	20:00
15.	Mathematics For The Gifted	12	30:00

Videotape Materials In Distribution By The Great Plains National Instructional Television Library, University of Nebraska, Lincoln, Nebraska 68508

RECOMMENDED STARTING LEVEL: Intermediate (Grades 4 -6)

	Series Name / Program Title	Number In Series	Time Length
16.	The Science Room	32	20:00
17.	Astronomy For The Gifted	12	30:00
18.	Cultural Understandings	14	30:00
19.	Hablo Mas Espanol	64	15:00
20.	Mathematics - 6	35	20:00
21.	The World of Science	52	30:00

RECOMMENDED STARTING LEVEL: Secondary (7-12)

	Series Name / Program Title	Number In Series	Time Length
1.	New Dimensions In Science	26	30:00
2.	English Composition	15	30:00
3.	Earth And Space Science	48	20:00
4.	Office Career Training	13	30:00
5.	TV Shorthand - ABC Stenoscript	39	30:00
6.	Sportsmanlike Driving	30	30:00
7.	Americans From Africa: A History	30	30:00
8.	Approaching Poetry	15	20:00
9.	The Peaceful Uses of Nuclear Energy	14	30:00

RECOMMENDED STARTING LEVEL: College (Undergraduate)

	Series Name / Program Title	Number In Series	Time Length
1.	Gregg Shorthand	30	45:00
2.	Business Law	30	45:00
3.	Marketing	30	45:00
4.	Communications & Education	30	30:00
5.	Data Processing - Introduction	30	45:00
6.	A Programmed Introduction to Economic Analysis	26	50:00
7.	American Public School	30	45:00
8.	Educational Psychology	30	45:00
9.	Overview of Human Relations Problems	30	45:00
10.	Measurement And Evaluation	30	45:00

Videotape Materials In Distribution By The Great Plains National Instructional Television Library, University of Nebraska, Lincoln, Nebraska 68508

RECOMMENDED STARTING LEVEL: College (Undergraduate)

	Series Name / Program Title	Number In Series	Time Length
11.	Philosophy of Education	30	45:00
12.	Introduction to the Visual Arts	30	30:00
13.	Fundamentals of Music	30	45:00
14.	Spanish - First Course	30	45:00
15.	History of American Civilization by Its Interpreters	94	30:00
16.	History of the American People From 1865	30	45:00
17.	Humanities - First General Course	30	45:00
18.	Humanities - Second General Course	30	45:00
19.	English Composition	30	45:00
20.	Fundamentals of Speech	30	30:00
21.	Shakespeare	30	45:00
22.	American Literature From Colonial Period to Civil War	29	45:00
23.	American Literature From Civil War to 20th Century	30	45:00
24.	Fundamentals of Mathematics	30	45:00
25.	College Algebra	30	45:00
26.	Logic	30	45:00
27.	Physical Science - First General Course	30	45:00
28.	Mechanics and Heat	30	45:00
29.	Physical Geology	30	45:00
30.	Descriptive Astronomy	30	45:00
31.	Weather and Man	20	60:00
32.	Social Science - First General Course	30	45:00
33.	Social Science - Second General Course	30	45:00
34.	National Government	30	45:00

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Channels To Learning	10	30:00
2.	TV In The Classroom	1	28:00
3.	Approaching Poetry	1	30:00
4.	Showcase	14	30:00
5.	The Role of the Classroom Teacher (Kinescope)	1	30:00

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Videotape Materials In Distribution By The Great Plains National Instructional Television Library, University of Nebraska, Lincoln, Nebraska 68508

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
6.	The Second Classroom (Kinescope)	1	25:00
7.	Discovering Discovery (Kinescope)	1	30:00
8.	The Studio Teacher (Kinescope)	1	47:00
9.	Television Techniques For Teachers (Film)	1	24:00
10.	Television In Your Classroom (Sound Film Strip)	1	12:00
11.	Enrichment Programs For Intellectually Gifted Students (Film)	14	30:00
12.	Ford Foundation Kinescopes (Kinescope)	100	10-45:00
13.	ITV Humanities Project (Kinescopes)	5	30-120:00

RECOMMENDED STARTING LEVEL: Adult

	Series Name / Program Title	Number In Series	Time Length
1.	Modern General (Secondary) Math for Parents	10	30:00
2.	TV High School: Natural Sciences	12	30:00
3.	TV High School: English Grammar	12	30:00
4.	TV High School: Social Studies	12	30:00
5.	TV High School: Literature	12	30:00
6.	TV High School: General Mathematics	12	30:00

Videotape Materials In Distribution By MPATI, Memorial Center, Purdue University, Lafayette, Indiana 47902

RECOMMENDED STARTING LEVEL: Primary (K-3)

	Series Name / Program Title	Number In Series	Time Length
1.	Scienceland	32	20:00
2.	Science Corner I	64	20:00
3.	Let's Go Sciencing	32	15:00
4.	Science Is Fun	32	15:00
5.	Science Is Everywhere	32	15:00
6.	Science Is Discovery	32	15:00
7.	Rhyme Time	16 / 32	10:00
8.	Initial Teaching Alphabet	48	20:00
9.	Your Community	16	20:00
10.	Singing, Listening, Doing	64	20:00
11.	Music For You	64	20:00
12.	All That I Am.	16	20:00
13.	Listen and Say	32	15:00
14.	Learning Our Language	64	20:00

RECOMMENDED STARTING LEVEL: Intermediate (4-6)

	Series Name / Program Title	Number In Series	Time Length
1.	Science Corner II	64	20:00
2.	Exploring With Science	64	20:00
3.	Adventures of Science	64	20:00
4.	Space Age Science	32	20:00
5.	Exploring Mathematics	64	20:00
6.	Que Tal, Amigos	128	20:00
7.	Hablemos Espanol	64	20:00
8.	Paso A Paso	64	20:00
9.	Bonjour Les Enfants	128	20:00
10.	En Avant	64	20:00
11.	Freedom To Read	16	15:00
12.	Reading Through Television	24	15:00

Videotape Materials In Distribtuion By MPATI, Memorial Center, Purdue University, Lafayette, Indiana 47902

RECOMMENDED STARTING LEVEL: Secondary (7-12)

	Series Name / Program Title	Number In Series	Time Length
1.	Nature of Matter	32	30:00
2.	Investigating The World of Science	64	30:00
3.	Adelante Amigos	128	20:00
4.	Our Adventure In Freedom	64	30:00
5.	Our Changing World	128	30:00
6.	Franklin to Frost	64	30:00
7.	Your State Today (Suitable Midwest Social Studies)	32	20:00

RECOMMENDED STARTING LEVEL: College (Undergraduate)

	Series Name / Program Title	Number In Series	Time Length
1.	Living Russian	64	30:00

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Initial Teaching Alphabet	6	30:00

Videotape Materials In Distribution By The National Instructional Television Center, Box A - Bloomington, Indiana 47401

RECOMMENDED STARTING LEVEL: Pre-School

	Series Name / Program Title	Number In Series	Time Length
1.	Roundabout	52	15:00
2.	Tell Me A Story	30	15:00
3.	Imagine That	15	15:00

RECOMMENDED STARTING LEVEL: Primary (K-3)

	Series Name / Program Title	Number In Series	Time Length
1.	Physical Education For "Doers" and "Viewers"	30	20:00
2.	Patterns In Arithmetic - Level 1	32	15:00
3.	Patterns In Arithmetic - Level 2	48	15:00
4.	Patterns In Arithmetic - Level 3	64	15:00
5.	Sing, Children, Sing	15	15:00
6.	Stepping Into Melody	30	15:00
7.	Stepping Into Rhythm	30	15:00
8.	All About You	20	15:00

RECOMMENDED STARTING LEVEL: Intermediate (4-6)

	Series Name / Program Title	Number In Series	Time Length
1.	You And Eye	30	20:00
2.	Meet The Arts	15	30:00
3.	Cover to Cover	30	20:00
4.	The WordSmith	15 / 28	20:00
5.	Patterns	33	20:00
6.	Patterns In Arithmetic - Level 4	64	15:00
7.	Patterns In Arithmetic - Level 5	64	15:00
8.	Patterns In Arithmetic - Level 6	64	15:00
9.	Let's Investigate	15	15:00
10.	The World of Change	20	20:00

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Videotape Materials In Distribution By The National Instructional Television Center, Box A - Bloomington, Indiana 47401

RECOMMENDED STARTING LEVEL: Secondary (7-12)

	Series Name / Program Title	Number In Series	Time Length
1.	Look To The Future	10	30:00
2.	The Communists	8	20:00
3.	Project: History	10	20:00

RECOMMENDED STARTING LEVEL: College (Undergraduate)

	Series Name / Program Title	Number In Series	Time Length
1.	Chemistry I: Basic Principles of Chemistry	15	30:00
2.	Chemistry II: Chemical Equilibrium	15	30:00
3.	Chemistry III: The Covalent Bond	15	30:00
4.	Chemistry IV: Some Elements and Their Compounds	15	30:00
5.	Physics I: Introductory Mechanics	15	30:00
6.	Physics II: Introductory Electricity	15	30:00
7.	Physics III: Introduction to Wave Motion, Light, and Sound	15	30:00
8.	Physics IV: Introduction to Modern Physics	15	30:00
9.	Physics V: Mechanics and Heat	15	30:00
10.	Physics VII: Electricity and Magnetism	15	30:00
11.	Physics VIII: Electronics	15	30:00
12.	Mathematics I: College Algebra	15	30:00
13.	Mathematics II: Coordinate Geometrics	15	30:00
14.	Mathematics III: Introduction to Calculus I	15	30:00
15.	Mathematics IV: Introduction to Calculus II	15	30:00
16.	Mathematics V: Introduction to Calculus III	15	30:00
17.	Mathematics VI: Introduction to Statistics	15	30:00
18.	Mathematics VII: Boolean Algebra and Computers	15	30:00
19.	Mathematics VIII: Probability	15	30:00
20.	Engineering I: Introduction to Computer Science I	15	30:00
21.	Engineering II: Introduction to Computer Science II	15	30:00
22.	Engineering III: Introduction to Metallurgy	15	30:00
23.	Engineering IV: Elect Eng: Circuit Analysis	15	30:00

Videotape Materials In Distribution By The National Instructional Television Center, Box A - Bloomington, Indiana 47401

RECOMMENDED STARTING LEVEL: College (Undergraduate)

	Series Name / Program Title	Number In Series	Time Length
24.	Government I: American National Government	15	30:00
25.	Government II: Ideologies in World Affairs	15	30:00
26.	History I: World History I	15	30:00
27.	History II: World History II	15	30:00
28.	History III: History of the United States I	15	30:00
29.	History IV: History of the United States II	15	30:00
30.	Psychology I: Principles of Behavior	15	30:00
31.	Psychology II: Man and His Motives	15	30:00
32.	Sociology I: Introduction to Sociology	15	30:00
33.	Economics I: Economics and the Public Interest	15	30:00
34.	Geography I: Introduction to Geography: The Geographer's World	15	30:00
35.	English I: Expository English I	15	30:00
36.	English II: Expository English II	15	30:00
37.	English III: Major American Books: American Literature	15	30:00
38.	English IV: The Critical Reader: English Literature	15	30:00
39.	Slide Rule Seminar	5	15:00

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	English - Fact and Fancy	15	30:00
2.	English For Elementary Teachers - First Course	15	30:00
3.	English For Elementary Teachers - Second Course	15	30:00
4.	Pathways to Discovering Music	4	30:00
5.	Sets and Systems	15	30:00
6.	Tell Me a Story	1	
7.	Physical Education For "Doers" and "Viewers"	2	
8.	Patterns	8	

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Videotape Materials In Distribution By Western Video Industries, Inc., 1541 North Vine Street, Los Angeles, California 90028

RECOMMENDED STARTING LEVEL: Primary (K-3)

	Series Name / Program Title	Number In Series	Time Length
1.	Exploring The World of Science	85	15:00
2.	English As A Second Language	30	15:00
3.	Holiday Specials	6	15:00

RECOMMENDED STARTING LEVEL: Intermediate (4-6)

	Series Name / Program Title	Number In Series	Time Length
1.	Sing Along With Me	32	15:00
2.	This - Our Country	32	15:00

RECOMMENDED STARTING LEVEL: Secondary (7-12)

	Series Name / Program Title	Number In Series	Time Length
1.	Demonstrations In Physics - First Series	15	15:00
2.	Demonstrations In Physics - Second Series	15	15:00

Videotape Materials In Distribution By Telstar Productions, Inc.,
366 North Prior Avenue, Saint Paul, Minnesota 55104

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Nursing Education: Nursing In Society	12	30:00
2.	Nursing Education: Pharmacology	24	30:00
3.	Nursing Education: Anatomy and Physiology	48	30:00
4.	Nursing Education: Chemistry	60	30:00
5.	Nursing Education: Communication	24	30:00
6.	Nursing Education: Microbiology	48	30:00
7.	Nursing Education: Social Science	36	30:00
8.	Nursing Education: Psychology	48	30:00

RECOMMENDED STARTING LEVEL: Adult

	Series Name / Program Title	Number In Series	Time Length
1.	Success Through Efficient Reading	12	30:00
2.	Success Through Effective Writing	10	30:00
3.	Success Through Word Power	10	30:00

Videotape Materials In Distribution By The Network For Continuing Medical Education, 342 Madison Avenue, New York, N.Y. 10017

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Medical subject series provided to participating hospitals and schools.	Biweekly	60:00
2.	Nursing and paramedical subject series provided to participating hospitals and schools.	Monthly	60:00
3.	Master Videotape Library available to qualifying institutions and agencies.	250	various

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Videotape Materials In Distribution By The Medical Television Network, Continuing Education in Medicine, University of California Extension, 10962 Le Conte, Los Angeles, California 90024

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Res Medica (Medical Series) provided to participating hospitals	27 annually	30:00
2.	Speaking of Nursing (nursing series) provided to participating hospitals.	9 annually	30:00
3.	Videotape Catalogue listing library of medical and nursing recordings available to qualifying hospitals	77	30-60:00

Videotape Materials In Distribution By Video Nursing, Inc.,
2645 Girard Avenue, Evanston, Illinois 60201

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Nursing and the Law	10	44:00
2.	Nursing In Psychiatry	24	44:00

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Videotape Materials In Distribution By ANA-NLN Center for Videotape, 342 Madison Avenue, New York, N.Y. 10017

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Return To Nursing	25	30:00

Videotape Materials In Distribution By Advanced Management Research, Inc., 1604 Walnut Street, Philadelphia, Pennsylvania 19103

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Fundamentals of Finance and Accounting for Non -Financial Executives	10	30-38:00
2.	Marketing and the Computer	8	25-44:30

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Videotape Materials In Distribution By Office of Public Affairs and Education, Republic Steel Corporation, Post Office Box 6778, Cleveland, Ohio 44101

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Exploring Basic Economics	10	30:00
2.	Understanding Government	7	30:00
3.	Understanding Politics	7	30:00
4.	Modern Management Methods	14	30:00

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Videotape Materials In Distribution By Educational Systems and Designs, Inc., 136 Main Street, Westport, Connecticut 06880

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Developing Communication Skills	6	30:00
2.	Management By Objectives	6	30:00
3.	Interviewing For Results	6	
4.	Controlling Labor Turnover and Absenteeism	8	
5.	Job Instructor Training	8	
6.	Supervisory Leadership	8	
7.	Quantitative Approaches to Decision Making	6	
8.	Looking Into Leadership	8	

Videotape Materials In Distribution By Professional Development Corporation, 233 Broadway, Suite 1375, New York, N.Y. 10007

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	Basic Unified Calculus	24	60:00
2.	Applied Differential Equations	24	60:00
3.	Fundamentals For Modern Analysis	12	60:00
4.	Modern Analysis and Transform Methods	24	60:00
5.	Numerical Methods and Computer Techniques	24	60:00
6.	Thermodynamics of Phase Equilibrum	10	60:00

Videotape Materials In Distribution By Modern Videotape Library, Modern Talking Picture Service, 1212 Avenue of the Americas, New York, N.Y. 10036

RECOMMENDED STARTING LEVEL: Intermediate (4-6)

	Series Name / Program Title	Number In Series	Time Length
1.	Your Share In Tomorrow	1	27:00
2.	The Mayflower Story	1	25:00
3.	The Time Of Our Lives	1	27:00
4.	Main Street U.S.A. - Today	1	22:00
5.	The Wondrous World of Sight	1	28:00
6.	Ski Country, USA	1	28:00
7.	Ski With Buick	1	29:00
8.	Chocolate Crossroads of the World	1	27:00
9.	The Invisible Power of Coal	1	28:00
10.	The World is One	1	28:00
11.	Light!	1	18:00
12.	Happy Holidays...Camping In The Smokies	1	28:30
13.	Occupation-Auto Mechanic	1	13:00
14.	Discover Hawaii	1	28:00
15.	Poised For Action	1	30:00
16.	The Six Deadly Skids	1	27:00
17.	Yoo Hoo! I'M A Bird	1	27:30
18.	You're The Judge	1	18:00
19.	From Cow To Carton	1	20:00
20.	The Name of the Game is - Fun!	1	27:30
21.	The Dangerous Years	1	30:00
22.	Horizons Unlimited	1	28:00
23.	The Answer is Clear	1	14:00
24.	Cream of the Crop	1	13:30
25.	The Name of the Game is ... Baseball	1	28:30
26.	Olympic Skates and Skis	1	13:30
27.	1968 Buick Open	1	28:00
28.	21st Century: The Laser - A Light Fantastic	1	30:00
29.	21st Century: Atomic Medicine	1	30:00
30.	21st Century: The Computer Revolution, Part I	1	30:00
31.	21st Century: The Computer Revolution, Part II	1	30:00
32.	21st Century: The Four-Day Week	1	30:00
33.	21st Century: Bats, Birds and Bionics	1	30:00
34.	21st Century: Miracle of the Mind	1	30:00

Videotape Materials In Distribution By Ampex Tape Exchange, Ampex Corporation, 2201 Lunt Avenue, Elk Grove Village, Illinois 60007

RECOMMENDED STARTING LEVEL: College (Undergraduate)

	Series Name / Program Title	Number In Series	Time Length
1.	AACTE Workshop In Teacher Education	4	44-52:00
2.	Professional Public Relations	12	30:00

RECOMMENDED STARTING LEVEL: Professional & Continuing Education

	Series Name / Program Title	Number In Series	Time Length
1.	44th NAEB Highlights	3	30:00
2.	44th NAEB Videorecord	6	45-60:00

RECOMMENDED STARTING LEVEL: Adult

	Series Name / Program Title	Number In Series	Time Length
1.	Interski	1	56:00

Instructional Course-Series and Lesson Titles Available on Videotape - Jan 1969

Source	Recommended Starting Level: Pre-School crs	Pre-School lsn	Primary (k-3) crs	Primary (k-3) lsn	Intermediate (4-6) crs	Intermediate (4-6) lsn	Secondary (7-12) crs	Secondary (7-12) lsn	College (ug) crs	College (ug) lsn	Prof & Cont Education crs	Prof & Cont Education lsn	Adult crs	Adult lsn	Total
Great Plains			18	505	21	677	9	230	34	1069	2	26	6	70	90/2577
MPATI			15	576	12	776	7	512	1	64	1	6			36/1934
NIT	3	97	8	269	11	378	3	28	39	575	7	75			71/1422
Western Video			3	121	2	64	2	30							7/ 215
Telstar											8	300	3	32	11/ 332
NCME											2	286			2/ 286
MTN											2	113			2/ 113
Video Nursing											4	73			4/ 73
ANA-NLN											1	25			1/ 25
AMR											2	18			2/ 18
Republic											4	38			4/ 38
Educational Sys											8	56			8/ 56
Prof Dev Corp											6	118			6/ 118
Modern											0	34			0/ 34
AMTEX									2	16	2	9	0	1	4/ 26
TOTALS	3	97	44	1471	46	1929	21	800	76	1724	49	1143	9	103	248/7267

#1 Designation of use is at recommended starting level. Majority of materials are multi-level.
#2 Must have two or more sequentially related titles for listing as a course-series. All individual program titles (whether qualifying as a course-series or not) counted in lesson-title totals.
#3 In two cases shorter course-series made up and distributed separately from longer course-series of lesson-titles are counted as additional course-series and lesson-titles. Ken Winslow 12/30/68

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